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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,889	12/07/2000	Shinji Isokawa	362-51	1026
33769	7590	11/26/2003	EXAMINER	
BODNER & O'ROURKE, LLP			LOUIE, WAI SING	
425 BROADHOLLOW ROAD, SUITE 108			ART UNIT	PAPER NUMBER
MELVILLE, NY 11747			2814	

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,889

Applicant(s)

ISOKAWA, SHINJI

Examiner

Wai-Sing Louie

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC§ 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (US 5,227,662) in view of Ishinaga (US 5,936,264) and Glenn et al. (US 6,228,676).

With regard to claim 1, Ohno et al. disclose a composite lead frame and semiconductor device (col. 3, line 25 to col. 7, line 30 and fig. 7) comprising:

- A pair of electrode, having an inner portion 12 and an outer portion 10, where the inner portion residing in the same plane as the outer portion (fig. 7);
- A mold 38 encapsulating the chip 34 and the mold 38 encapsulating the inner portion of the electrode 12 and the outer portion 10 extending substantially laterally beyond the mold 38 (fig. 7);
- A step 28 formed in the inner portion 12 of the electrode inside the mold 38 and the step 28 having a height increasing from an outer side to an inner side of the mold 38 (fig. 7).

Ohno et al. disclose the step is formed by the leadframe and plastic film 22, but do not disclose the step is formed by only metal layer. However, Glenn et al. disclose a metal step contact pad is formed on the metallization 22 (Glenn fig. 1). Glenn et al. teach using gold plated contact pad forms better bonding between the bond wire 40 and the

metallization 22. Therefore, it would have been obvious for the one with ordinary skill in the art to modify Ohno's device with the teaching of Glenn et al. to provide a metal step contact pad on the metallization in order to have a better electrical connection;

- Ohno et al. do not disclose the IC chip is a light-emitting chip. However, it is common in the art to encapsulate a light-emitting chip with this method such as disclosed in Ishinaga (Ishinaga fig. 1). Therefore, it would have been obvious the IC chip could be a light-emitting chip.

With regard to claim 2 and in according to claim 1 above, Ohno et al. disclose the electrode includes a Cu layer (col. 7, lines 5-6) and the step being formed by changing the thickness of the Cu layer (fig. 7).

With regard to claims 3-4 and in according to claim 2 above, Ohno et al. disclose an Au layer formed in an uppermost layer (col. 6, lines 41-43).

Response to Arguments

Applicant's arguments filed 8/4/03 have been fully considered:

- The applicant has submitted a Terminal Disclaimer to obviate the double patenting rejection over a US Patent No. 6,180,962.
- The applicant argues that reference Ohno et al. do not teach or suggest the specific structure of the step formed in the inner portion of the electrode is formed by metal only (bottom of page 4). However, Ohno et al. modified by Glenn et al. would meet this limitation. Please see above office action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the

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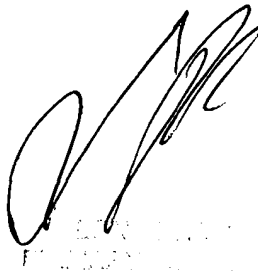
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organization where this application or proceeding is assigned are (703) 3U8-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Wsl

November 10, 2003.

A handwritten signature in black ink, consisting of a large, stylized 'W' followed by a series of loops and a final flourish.